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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/614,631	07/12/2000	John Dennis Hilgren	163.1382US01	2124
23552	7590	05/04/2004	EXAMINER	
MERCHANT & GOULD PC			PAK, JOHN D	
P.O. BOX 2903			ART UNIT	
MINNEAPOLIS, MN 55402-0903			PAPER NUMBER	

1616

DATE MAILED: 05/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/614,631

Applicant(s)

HILGREN ET AL.

Examiner

JOHN D PAK

Art Unit

1616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-9, 31, 32 and 35-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 45 and 46 is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-9, 31 and 35-44 is/are rejected.
- 7) ☒ Claim(s) 4 and 32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/20/04 (faxed by applicant on 2/9/04) has been entered.

Claims 1-4, 6-9, 31-32, 35-46 are pending in this application.

Applicant's Declaration under 37 CFR 131, which establishes that the presently claimed invention was invented before the 10/14/99 date of the Hei et al. reference (WO 99/51095) and applicant's further exclusion of said reference under 35 USC 103(c) have been considered. The ground of rejection that relies on the Hei et al. reference (WO 99/51095) is hereby withdrawn. In this regard, it appears that there are two U.S. patents that seem to contain similar disclosure as WO 99/51095: 6,165,483 and 6,238,685. These patents qualify as prior art references under 35 USC 102(e). Moreover, the effective filing date of both patents is 4/6/98, which predates the swear-back date of 10/44/99 in applicant's Declaration. Additionally, the fact that WO 99/51095 was commonly assigned to the assignee of the present application at the time the invention was made does not in any way indicate whether or not the two U.S. Patents 6,165,483 and 6,238,685 were also commonly assigned to the assignee of the

Art Unit: 1616

present application **at the time the invention was made**. Therefore, said patents are applicable as prior art against the present application.

Applicant is advised that claims 4 and 32 are duplicates of claims 45 and 46, respectively. Cancellation of either set of claims is suggested.

Claims 45 and 46 are allowed. Claims 4 and 32 remain objected to – see below for a full statement of the objection.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 6-9, 31 and 35-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hei et al. (US 6,165,483) in view of Lokkesmoe et al., FSTA abstract 1999(10):C1223 and Taylor et al.

At the outset, it is noted for the record that US 6,165,483 contains virtually identical disclosure to the previously cited WO 99/51095: Derwent considers them to be of the same patent family. Lokkesmoe et al., the FSTA abstract and Taylor et al. were previously cited. Therefore, the rationale for this ground of rejection is virtually the same as those of record.

Hei et al. disclose a sanitizing concentrate formulation that contains the following ingredients (column 3, lines 56-65; column 4, lines 48-51):

5-40 wt% C2-4 carboxylic acid, for example acetic acid;

1-20 wt% C8-12 aliphatic carboxylic acid, for example octanoic acid;

1-30 wt% hydrogen peroxide;

1-20 wt% C2-4 peroxy-carboxylic acid, for example peracetic acid;

0.1-20 wt% aliphatic C8-12 peroxy-carboxylic acid, for example, peroxyoctanoic acid; and

chelating agent.

The amount of chelating agent used is sufficient to "control or sequester hardness ions such as calcium and magnesium" to enhance activity and stability of peroxyacids (column 8, lines 3-12). Effective treatment and protection against microbial attacks are provided for produce, fruits and vegetables, as well as growing plants (column 3, lines 19-25; Working Example 2). End use composition is made by diluting the concentrate formulation with major proportion of water to result in pH 2-8, 10-75 ppm C2-4 peroxy-carboxylic acid, for example peracetic acid, and 1-25 ppm C8-12 percarboxylic acid, for example peroxyoctanoic acid. See column 3, lines 31-38. Synergistic biocidal effect is obtained with the disclosed combinations of two types of peroxyacids at pH<7 (column 4, lines 3-7). Activity against a wide variety of microorganisms such as E. coli, Salmonella such as Salmonella javiana, Listeria monocytogenes, yeast and molds are

disclosed (column 6, lines 18-22; Working Example 2 and Table 2) for combinations of 50 ppm peracetic acid + peroctanoic acid (Table 2). Various method of achieving the final end use or equilibrium composition is taught – e.g., mixing C2-4 carboxylic acid + C8-12 aliphatic carboxylic acid + hydrogen peroxide + adjuvants to obtain an equilibrium mixture (column 8, lines 24-50). The level of active components in the concentrate is dependent upon the dilution factor and desired acidity in the e use solution (column 8, lines 65-68). Ratio of peracetic acid to peroctanoic acid ranges from 15:1 to 1:1, with there being at least 4 ppm peracetic acid and at least 1 ppm peroctanoic acid (see column 3, lines 35-38; column 6, lines 41-43).

Lokkesmoe et al., FSTA abstract 1999(10):C1223 and Taylor et al. are already of record in the previous two Office actions. They are cited herein for the same reason and same disclosure, which are incorporated herein by reference. See the Office Action of 12/18/02, pages 4-8. In summary, Lokkesmoe et al. disclose a composition for preventing microbial growth in aqueous streams that is made by combining hydrogen peroxide with carboxylic acid so that peroxyacids such as peracetic acid, peroctanoic or mixtures thereof is formed (claims 23-26). The FSTA abstract discloses peracetic acid and peroctanoic acid to be effective against *Listeria monocytogenes*. Taylor discloses mixture of hydrogen peroxide + peracetic acid to be effective against *E. coli* O157:H7 at both 20 and 10 degrees Celsius (see Product code 13 on Tables 2 and 3).

Since the primary reference, US Patent 6,165,483, is virtually identical in disclosure (verbatim in virtually all cited places) to the previously cited primary reference WO 99/51095, the same analysis as to the difference between the primary reference and the claimed invention would be applicable here. Therefore, the discussion on pages 5-8 of the Office action of 12/18/02 as to those differences and why the prior art as a whole suggests the claimed invention as a whole is incorporated herein by reference. It is noted that the previously cited FSTA abstract 2000(06):J1220 is not relied upon herein, but the teachings there is repetitive of the remaining secondary references.

Applicant's amendments, arguments and additional evidence have been given due consideration, but they were deemed unpersuasive. Even though the effective date of WO 99/51095 was overcome by applicant's 131 Declaration, the same disclosure is available in the cited US Patent 6,165,483. Therefore, applicant's arguments as to unavailability of the disclosure by said WO document is not persuasive.

Applicant has filed a Declaration under 37 CFR 132 to further support his position that the claimed invention is unobvious. Peroxyoctanoic acid : Peroxyacetic acid data points of 1:4, 1:4.7, 1:5, 1:10 and 1:37 were tested, with the first three giving better results. The claims require the ratio to be 1:5 or higher, e.g. 1:4.7 or 1:4.

It bears repeating here: the cited US 6,165,483 (Hei et al., just as in the previously cited WO 99/51095 by Hei et al.), explicitly discloses synergistic microbial

Art Unit: 1616

control activity when the C2-4 peroxycarboxylic acid is combined with C8-12 peroxycarboxylic acid (paragraph bridging columns 3 and 4). Hei et al. disclose the ratio of the C2-4 peroxycarboxylic acid to C8-12 peroxycarboxylic acid to be 15:1 to 1:1. Note, 1:1 more than meets applicant's claim requirement. 1:1 is higher amount of peroctanoic acid than any composition that applicant tested.

Hence, the prior art clearly teaches 1:1 ratio, which is well within applicant's claim feature. Because the prior art already teaches synergistic results for 1:1, it cannot be accepted that applicant's data is somehow unobvious over such an expectation of synergism, particularly when applicant has not even tested the 1:1 ratio that was expressly disclosed by the prior art. To date, it is the Examiner's position that the prior art clearly teaches and suggests expectation of synergistic results for 1:1 ratio of peracetic acid and peroctanoic acid, and applicant has not submitted sufficient evidence to outweigh the teachings of the prior art as a whole. When the prior art teaches 1:1 ratio to be synergistic, and when the claims read on that 1:1 ratio, applicant's testing of 1:4, 1:4.7 and 1:5 are not particularly relevant.

For these reasons, the claimed invention, as a whole, would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, because every element of the invention has been fairly suggested by the combined teachings of the cited references.

Claims 1-3, 6-9, 31 and 35-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hei et al. (US 6,238,685) in view of Lokkesmoe et al., FSTA abstract 1999(10):C1223 and Taylor et al.

Applicant is advised that this ground of rejection is identical in rationale and basis as the previous ground of rejection. Note, the only difference is the Hei et al. reference, which is a direct divisional of the first cited Hei et al. (US 6,165,483). Therefore, the above discussion is incorporated herein by reference. This ground of rejection is made here so that if applicant were to file a 103(c) exclusionary statement, he would do so with respect to both patents.

Claims 4 and 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims – but note the aforementioned statement on duplicate claims.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to JOHN PAK whose telephone number is **(571)272-0620**, **effective February 3, 2004**. The Examiner can normally be reached on Monday to Friday from 8 AM to 4:30 PM.

Art Unit: 1616

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's SPE, Thurman Page, can be reached on (571)272-0602, effective February 3, 2004.

The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-1600.

A handwritten signature in black ink, appearing to be 'JP' or 'J. Pak', written in a cursive style.

**JOHN PAK
PRIMARY EXAMINER
GROUP 1000**